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Research Article

**STUDY TO KNOW THE MANAGEMENT AND CLINICAL  
PRESENTATION OF FOREIGN BODY ASPIRATION IN  
CHILDREN**<sup>1</sup>Dr. Ayesha Nadeem, <sup>2</sup>Dr. Nadia Afzal, <sup>3</sup>Dr. Hadiqa Jafri<sup>1,2,3</sup>House Officer, Mayo Hospital, Lahore**Article Received:** January 2019**Accepted:** February 2019**Published:** March 2019**Abstract:*****Objective:** To investigate the clinical presentation, management and outcome of foreign body aspiration in children.****Study Design:** A case Series.****Place and Duration:** In the Pediatrics Unit II of Mayo Hospital, Lahore for one year duration from January 2018 to December 2018.****Methods:** During the study period, 50 patients presented with suspicion of foreign body aspiration.****Results:** Examination of 50 children with foreign body aspiration showed that the most common age group was between 12 and 24 months. The majority were male (66%) and the male to female ratio was 1.9: 1, and 56% of the children had a foreign body aspiration history witnesses. Common symptoms were cough (84%), asphyxia (38%), respiratory distress (76%), fever (30%) and stiffness (8%). The most common finding was the decrease in air intake (68%). In 58% of the cases, the from the right main bronchus foreign body was removed and in 42% of cases betel nut was the most common foreign body. There was no death.****Conclusion:** Inhalation of foreign bodies is more common in men and usually occurs between 12 and 24 months of age. The most common complaints are cough and respiratory distress. However, children presented with sudden respiratory distress should be suspected tracheobronchial foreign bodies, even if their history and chest radiographs are inadequate. Early bronchoscopy results in excellent results in suspected patients.****Key words:** Tracheobronchial, Foreign body, Betel nut.***Corresponding author:****Dr. Ayesha Nadeem,**

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**INTRODUCTION:**

Tracheobronchial foreign body aspiration (FBA) is a potentially fatal event, as it may obstruct breathing by obstructing the airway affecting oxygenation and ventilation<sup>1-3</sup>. In children, the FBA may be considering on the presentation of shortness of breath if such an episode has been witnessed by the child or an adult. In contrast, the unseen FB clinical presentation of may be subtle and require careful diagnosis, careful clinical evaluation, and radiography and bronchoscopy. In children, common cause of mortality and morbidity is FBA especially in children under two years of age<sup>4-5</sup>. During 2000, in the United States, children under the age of 14 were responsible for taking or aspirating a foreign body from more than 17,000 visits to the emergency department<sup>6</sup>. Because of the children curious nature to put everything in their mouths, the lack of adult supervision and the lack of molar teeth they are at high risk of inhaling foreign body. In inhalation of foreign body, the most important factor is Age; Less than 5 years. Most analysis show that less than 15% of foreign body incidence occur in children older than 5 years of age. The usual ingested objects are organic matter or food<sup>7</sup>. This study was carried out to determine the management, clinical presentation and outcome aspiration in children who inhaled foreign body.

**MATERIALS AND METHODS:**

A series of foreign body inhalation cases in this tracheobronchial tree was performed at the Pediatric Unit II of Mayo Hospital, Lahore for one year duration from January 2018 to December 2018.

In the study fifty patients were admitted with suspected foreign body aspiration. Under general anesthesia, all patients were done with rigid bronchoscopy. Only those patients were included in the analysis of a foreign body from the tracheobronchial airway. Data were collected according to gender, age, physical findings, duration of disease, presentation of complaints, place and type of foreign body, and result of foreign body inhalation. All data were recorded in a pre-designed format, and the results were analyzed using version 18 of SPSS.

**RESULTS:**

Of the 50 patients in this study, 33 (66%) were male and 17 (34%) were female and male to female ratio was 1.94: 1. The majority of patients [46 (92%)] were below average 34 months to 72 months of age. Twenty-one (42%) patients were between 12 and 24 months, 6 (12%) were less than 12 months, and 19 (38%) were between 24 and 72 months. Only 4 (8%) patients were older than 72 months. Parents brought twenty-eight children (56%) with a history of foreign body breathing. Thirty-one patients (62%) were admitted within 24 hours, 15 (30%) were admitted within 1-7 days and 4 (8%) patients were admitted after 7 days. The most common symptom was cough in 42 (84%) patients, respiratory distress in 38 (76%) patients, asphyxia in 19 (38%) patients, fever in 15 (30%) patients, and reproduction in 4 (8%) patients. In clinical examination, 34 patients (68%) experienced wheezing and 34 (68%) had wheezing and 15 had bilateral crackles. 30% of patients (table 1).

**TABLE 1 Clinical features of children with foreign body aspiration (n=50)**

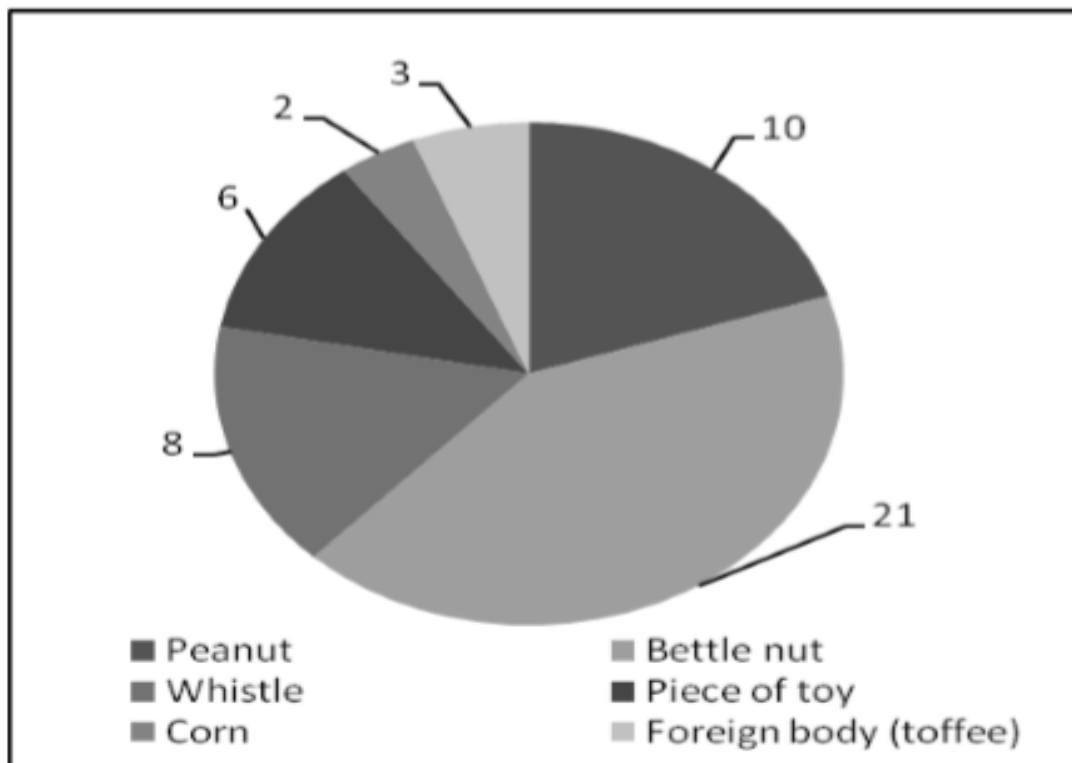
Clinical Features	Number	%tage
Cough	42	84
Respiratory difficulty	38	76
Choking	19	38
Fever	15	30
Stridor	4	08
Unilateral decreased air entry	34	68
Wheeze	18	36
Bilateral crepitations	15	30

Chest X-ray was normal in 7 (14%), unilateral hyperinflation (26%) (52%), and bilateral leakage in 17 (34%). Bronchoscopy was performed in all patients. In bronchoscopy, 29 patients (58%) had foreign bodies in the right main bronchus, 12 patients (24%) had left main bronchus and 9 (18%) had trachea (Table 2).

**TABLE 2: Location of Foreign Bodies (n = 50)**

Location	Number	percentage
Foreign body in right main bronchus	29	58
Foreign body in left main bronchus	12	24
Trachea	09	18

Bronchoscopy revealed the following objects: 21 (42%) of themed hazelnuts, followed by peanuts in 10 (20%), whistles in 8 (16%), toys in 6 (12%), candy pieces in 3 (6%) and 2 (4%) of corn (Figure-1).



**Fig 1: Types of foreign bodies removed on bronchoscopy. (n=50).**

In our study, no patient was expired. However, 2 patients had pneumothorax and 1 patient had subcutaneous emphysema due to continuous cough during admission to the hospital. Chest intubation was performed in patients with pneumothorax and was treated conservatively in patients with subcutaneous emphysema. All patients recovered and discharged after bronchoscopy.

#### DISCUSSION:

Foreign body aspiration is a common cause of morbidity and mortality in children under 2 years of age. A inhaled foreign body can be placed at any point from supraglottis to terminal bronchioles<sup>9-10</sup>. The two main factors that determine the result of a inhaled foreign body are its size and place of

influence. Therefore, while large foreign bodies can cause a complete blockage causing death, partial occlusion provides a less serious presentation<sup>11</sup>. Our foreign body aspiration study reveals that the majority of children presenting with foreign body inhalation are younger than 5 years of age with a maximum incidence between 5-8 years of age. The

ratio of men and women was 1.9: 1, not significantly different from other studies<sup>12</sup>. In this study, the main features of the presentation were cough (84%), respiratory distress (76%), asphyxia (38%), fever (30%) and stridor (8%). These findings correlate well with another study conducted by Yeh Lc10. Asif M concluded that asphyxiation was the most common symptom of foreign body inhalation<sup>13</sup>. In our study, the common area of foreign body involvement was right main bronchus, followed by left main bronchus and trachea. These findings are similar to another study by Badar et al. In Islamabad, showing that there were 61% of patients had a foreign body in the right main bronchus, 10% in the left main bronchus and 5.5% in the trachea. 21 (42%) patients were found to be confined to peanuts (20%), whistle (16%), toys (12%), confectionery (6%) and corn (4%)<sup>14</sup>. In the Western countries, peanuts are the most common foreign bodies; while some studies mention whistles and other studies mention hazelnuts and plastic bodies, which are more common than other foreign bodies<sup>15</sup>. In our study, there was no death due to late recognition, because of the presence of good anesthesia and bronchoscopy facilities in the hospital.

### CONCLUSION:

Foreign body inhalation causes sudden cough and respiratory distress in children under 72 months of age. It is important that doctors and caregivers are trained to keep these foods away from the child, as most patients are young children and usually aspirated objects, such as betel nuts and peanuts. Be old enough to chew them properly. It should also be reminded that small objects, such as needles and small toys, remain in a place out of the reach of their children. Mass education through the media is compulsory to prevent such accidents. Even if there is no support history in children with sudden respiratory distress, a high index of doubt is required. Early diagnosis, bronchoscopy and good anesthesia can prevent life-threatening asphyxia, permanent lung injury or mortality.

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